

REMARKS

Claim Rejections

Claims 1-8 are rejected under 35 U.S.C. § 102(b) as being anticipated by Pace (U.S. 5,904,499).

Drawings

The Examiner has objected to the drawings under 37 C.F.R. §1.84(p)(5) insofar as the reference number "310" was not included in the description and because reference numbers "125" and "110" have been used in reference to the chip. Since the specification has been amended to provide antecedent basis for reference number "310" and the reference number for the chip has been changed to read --110--, it is not believed that any drawing corrections are necessary.

Applicant proposes to amend Figure 1, as illustrated in red on the attached photocopy. In Figure 1 it is proposed to add the label --Prior Art--. No "new matter" has been added to the original disclosure by the proposed amendments to this figure. It is believed the foregoing proposed amendment obviates the outstanding objections to the drawings. Approval of the proposed drawing change is respectfully requested.

Amendments to Specification

Applicant has amended the specification as noted above to cure obvious grammatical and idiomatic inaccuracies and to correct the reference number for the chip to read --110-- and to provide antecedent basis for reference number --310--.

It is believed that the foregoing amendments to the specification overcome the outstanding objections thereto. No "new matter" has been added to the original disclosure by the foregoing amendments to the specification.

New Claims

By this Amendment, Applicant has canceled claims 1-8 and has added new claims 9-16 to this application. It is believed that the new claims specifically set forth each element of Applicant's invention in full compliance with 35 U.S.C. § 112, and define subject matter that is patentably distinguishable over the cited prior art.

The new claims are directed toward a bonding pad structure for improving impedance matching, which is used in an electrical device having a plurality of electrically-connected layers for signal transmission and grounding, comprising: at least two bonding pads (210, 220, 230) including a first bonding pad (210) and a second bonding pad (220), each of the at least two bonding pads having: at least two plugs (365-373); and at least two metal layers (320-360), wherein, each of the at least two metal layers are electrically connected to and spaced apart by one of the at least two plugs, ends of at least two of the at least two metal layers of the first bonding pad are alternately spaced apart and overlapped with ends of at least two of the at least two metal layers of the second bonding pad.

Other embodiments of the present invention include: each of the at least two plugs and each of that least two metal layers are located in insulation layers (112) of the electrical device; the electronic device is a printed circuit board; the electronic device is a chip; the chip includes six metal layers (M1-M6); the at least two bonding pads includes the first bonding pad, the second bonding pad, and a third bonding pad (230); each of the first bonding pad, the second bonding pad, and the third bonding pad have three plugs and three metal layers respectively, the first bonding pad has first, third, and fifth metal layers (M1, M3, M5), the second bonding pad has second, fourth, and sixth metal layers (M2, M4, M6), the third bonding pad has first, third, and fifth metal layers (M1, M3, M5), the second metal layer is located above the first metal layer, the third metal layer is located above the second metal layer, the fourth metal layer is located above the third metal layer, the fifth metal layer is located above the fourth metal layer, and the sixth metal layer is located above the fifth metal layer; and one end of the first, third, and fifth metal layers of the first bonding pad overlap a first end of the second, and fourth metal layers of the second bonding pad, and one end of the first, third, and fifth metal layers of the third bonding

pad overlap a second end of the second, and fourth metal layers of the second bonding pad.

The cited reference to Pace discloses a package for a power semiconductor chip including feed-throughs (520, 521), terminals (522), and metal layers (513, 514, 518).

Pace does not teach ends of at least two of the at least two metal layers of the first bonding pad are alternately spaced apart and overlapped with ends of at least two of the at least two metal layers of the second bonding pad; the chip includes six metal layers; each of the first bonding pad, the second bonding pad, and the third bonding pad have three plugs and three metal layers respectively; the first bonding pad has first, third, and fifth metal layers, the second bonding pad has second, fourth, and sixth metal layers, the third bonding pad has first, third, and fifth metal layers; the second metal layer is located above the first metal layer, the third metal layer is located above the second metal layer, the fourth metal layer is located above the third metal layer, the fifth metal layer is located above the fourth metal layer, and the sixth metal layer is located above the fifth metal layer; nor does Pace teach one end of the first, third, and fifth metal layers of the first bonding pad overlap a first end of the second, and fourth metal layers of the second bonding pad, and one end of the first, third, and fifth metal layers of the third bonding pad overlap a second end of the second, and fourth metal layers of the second bonding pad.

It is axiomatic in U.S. patent law that, in order for a reference to anticipate a claimed structure, it must clearly disclose each and every feature of the claimed structure. Applicant submits that it is abundantly clear, as discussed above, that Pace does not disclose each and every feature of Applicant's new claims and, therefore, could not possibly anticipate these claims under 35 U.S.C. § 102. Absent a specific showing of these features, Pace cannot be said to anticipate any of Applicant's new claims under 35 U.S.C. § 102.

It is further submitted that Pace does not disclose, or suggest any modification of the specifically disclosed structures that would lead one having ordinary skill in the art to arrive at Applicant's claimed structure. Thus, it is not believed that Pace renders obvious any of Applicant's new claims under 35 U.S.C. § 103.

Application No. 10/705,978


Summary

In view of the foregoing amendments and remarks, Applicant submits that this application is now in condition for allowance and such action is respectfully requested. Should any points remain in issue, which the Examiner feels could best be resolved by either a personal or a telephone interview, it is urged that Applicant's local attorney be contacted at the exchange listed below.

Respectfully submitted,

Date: December 23, 2004

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IN THE DRAWINGS:

Please amend Figure 1 as illustrated in red on the attached photocopy.